

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-011275**Date Inspected:** 06-Jan-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** M. Gregson, J. Salazar**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Hinge K Pipe Beams**Summary of Items Observed:**

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

**Hinge-K Pipe Beam Assembly 102A-3****a111-3 Forging to a110-3 Base Plate**

The QA Inspector noted that OIW welder # O6, Mr. Tim O'Brian was continuing to blend the weld start/stops, removing weld spatter and grinding all areas, which were previously marked by OIW QC Inspectors. The QA Inspector noted that these areas were on the previously completed submerged arc welded (SAW), HPS 485W stiffeners, designated as weld joints #W1-01 thru W1-163. The QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that the visual clean-up that was being performed by Mr. O'Brian, was intermittently monitored and areas that were completed, were then visually re-inspected.

**OIW Fabrication Shop-Bay 6 (ESW Overlay Process)****Hinge-K Pipe Beam Fuse Assembly 120A-6****a124-14 Half Fuse to a124-2 Half Fuse**

The QA Inspector noticed that the third and final ESW stainless steel overlay passes were in-process, on this fuse assembly 120A-6. QA Inspector witnessed welder #J6, Mr. Craig Jacobson performing electro slag welding (ESW) on the third layer welding passes, in the flat position. The QA Inspector noted that the third layer pass was now approximately 30% complete and Soudokay brand Soudotape 316L stainless steel consumable strip, was

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## WELDING INSPECTION REPORT

( Continued Page 2 of 4 )

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being utilized. The QA Inspector randomly noticed QC Inspector Jose Salazar was present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QC Inspector Salazar explained to the QA Inspector that welding amperage was previously recorded at 1200 amps/24.5 volts, travel speed at 229mm/min. and a pre-heat temperature recorded at 70 degrees Fahrenheit (21 C). The QA Inspector verified the welding parameters and the minimum pre-heat temperatures were in compliance with the applicable WPS 7003. The QA Inspector verified Mr. Craig Jacobson was currently qualified for this welding process and position. The QA Inspector noted that the ESW being performed appeared to be in compliance with WPS 7003. See attached picture below.

The QA Inspector was present on this swing shift and witnessed welder #V7, Mr. Vincent Vue performing electro slag welding (ESW) on the third layer welding passes, in the flat position. The QA Inspector randomly noticed QC Inspector Gary Mundt was present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QC Inspector Mundt explained to the QA Inspector that welding amperage was previously recorded at 1200 amps/24.5 volts, travel speed at 229mm/min. and a pre-heat temperature recorded at 70 degrees Fahrenheit (21 C). The QA Inspector verified the welding parameters and the minimum pre-heat temperatures were in compliance with the applicable WPS 7003. The QA Inspector verified Mr. Vue was currently qualified for this welding process and position. The QA Inspector noted that the ESW being performed appeared to be in compliance with WPS 7003.

### AG Machining (Boring, OR)

On this date, the QA Inspector arrived at AG Machining to witness the final machining on Fuse 120A-4. The QA Inspector met with the AG machinist and AG explained that the third and final cut pass had been previously completed. AG explained that after the third and final cut pass was completed, that approximately 10 surface inclusions were still present in the overlay, that will require weld repairs. AG explained that they were currently in-process of setting up to hone the entire surface overlay, utilizing a superfinisher. AG explained that the honing will polish the surface overlay to the minimum contract requirements of .8um. AG explained that after the honing is complete, OIW will arrive to perform the excavations and weld repairs, on the overlay surface. See attached pictures below.

### Material, Equipment, and Labor Tracking (MELT)

QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project.

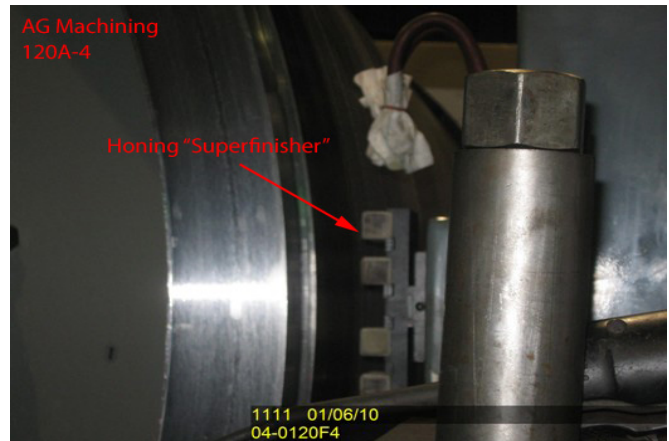
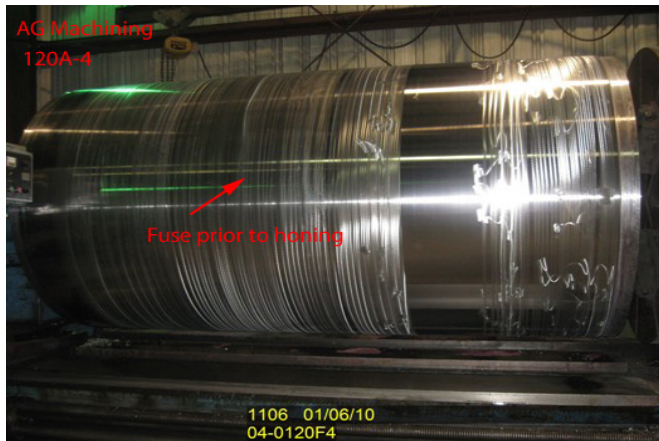
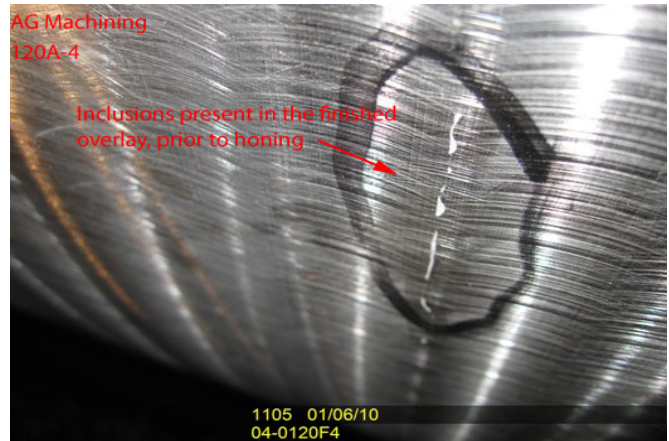
The QA Inspector observed at Oregon Iron Works: 5 OIW production personnel and 2 QC Inspectors.

The QA Inspector observed at AG Machine shop: 1 AG machinist and 1 AG supervisor.

The QA Inspector noted that no work was performed at OIW Vancouver paint shop.

# WELDING INSPECTION REPORT

( Continued Page 3 of 4 )



## Summary of Conversations:

As noted above.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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## WELDING INSPECTION REPORT

( Continued Page 4 of 4 )

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<b>Inspected By:</b>	Vance,Sean	Quality Assurance Inspector
<b>Reviewed By:</b>	Adame,Joe	QA Reviewer

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